780 CMR 53.00 BUILDING PLANNING FOR SINGLE- AND TWO-FAMILY DWELLINGS

780 CMR 5301 DESIGN CRITERIA

5301.1 Design. Buildings and structures, and all parts thereof, shall be constructed to safely support all loads, including dead loads, live loads, roof loads, flood loads, snow loads, wind loads as prescribed by 780 CMR 51.00 through 99.00. The construction of buildings and structures shall result in a system that provides a complete load path capable of transferring all loads from their point of origin through the load-resisting elements to the foundation.

5301.1.1 Alternative Provisions. *As an alternative to the requirements in 780 CMR 5301.1 the following standards are permitted subject to the limitations of 780 CMR 51.00 through 99.00 and the limitations therein.* ~~*In lieu of prescriptive compliance,*~~ ~~*where*~~ *Where engineered design is used in conjunction with these standards the* ~~*engineered*~~ *design shall* ~~*be performed by a Massachusetts registered professional engineer or architect, employ an appropriate engineering rationale consistent with the standards below and utilize the wind and snow loads set forth in 780 CMR 51.00 through 99.00..*~~comply with 780 CMR.

1. American Forest and Paper Association (AF&PA) *Wood Frame Construction Manual* (WFCM).
2. American Iron and Steel Institute (AISI), *Standard for Cold-Formed Steel Framing-Prescriptive Method for One- and Two-family Dwellings* (COFS/PM).

~~*Note that*~~ *Note: S*~~*s*~~*eismic design requirements are not applicable to one- and two-family detached dwellings.*

5301.1.2 Construction Systems. The requirements of 780 CMR 51.00 through 99.00 are based on platform and balloon-frame construction for light-frame buildings. The requirements for concrete and masonry buildings are based on a

balloon framing system. Other framing systems must have equivalent detailing to ensure force transfer, continuity and compatible deformations.

***5301.1.3 Engineered Design**. When a building of otherwise conventional construction contains structural elements exceeding the limits of 780 CMR 5301 or otherwise, not conforming to 780 CMR 51.00 through 99.00, these elements shall be designed in accordance with accepted engineering practice. The extent of such design need only demonstrate compliance of nonconventional elements with other applicable provisions and shall be compatible with the performance of the conventional framed system. Engineered design shall be provided by a Massachusetts registered professional engineer or architect~~. and shall utilize the wind and snow loads set forth in 780 CMR 51.00 through 99.00.~~* The registered engineer or architect may use the Massachusetts Basic Building Code for structural design of buildings covered by the One and Two Family Dwelling Code and must follow the Basic Building Code for structural design of components and systems not addressed in the One and Two Family Dwelling Code.